

# Landscape management and governance, Il'Ngwesi group ranch—Laikipia, Kenya



RESEARCH  
PROGRAM ON  
Dryland Systems

ILRI PROJECT REPORT



NGWESI GROUP RANCH



CSDES-UON

# Landscape management and governance, Il'Ngwesi group ranch—Laikipia, Kenya

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CSDES-UON and Nabara Consult

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## Abbreviations and acronyms

AGM	Annual General Meeting
CSDES-UON	Centre for Sustainable Dryland Ecosystems and Societies, University of Nairobi
GRC	Group ranch committee
ICT	Il'Ngwesi Community Trust
ILRI	International Livestock Research Institute
KWS	Kenya Wildlife Services
LWF	Laikipia Wildlife Forum
NRM	Natural resource management
NRT	Northern Rangelands Trust

# I Introduction

The design and operation of successful natural resource management (NRM) systems for pastoral drylands continue to pose significant challenges to policymakers, government agencies, and development actors. Drylands have been described as non-equilibrium systems (Fratkin and Mearns 2003), which unlike stable equilibrium ecologies, experience high variability in resource distribution and seasonal precipitation, and face recurrent environmental shocks. While fragile and prone to degradation, dryland ecosystems are also robust and capable of fast recovery (Fratkin 1986; Mwangi and Ostrom 2009; Robinson and Berkes 2010). Initiatives that strive to promote efficient and sustainable use of dryland resources and increase resilience in the non-equilibrium environments demand holistic understanding of socio-ecological conditions and natural resource governance in the dryland ecologies.

The International livestock Research Institute (ILRI) has commissioned a set of case studies as part of efforts to develop deeper understanding of NRM in Africa's drylands and contribute to a typology of landscape-level NRM approaches, which would be helpful in clarifying policy and governance design choices for policymakers and development actors. The landscape-level approach is informed by the opinion that much of traditional understandings around community-based NRM in dryland contexts, and many of the models for it, is based on observations made on resource management practices at local village levels. These are less applicable to dryland environments, where collective pastoral resources are commonly spread out at a scale much larger than the local level. The landscape-level is a more appropriate scale to analyse dryland environments and natural resource management.

This document presents the process and findings of an ILRI commissioned NRM case study carried out among the Il'Ngwesi Maasai pastoral community in Laikipia County, Kenya. The study took place between December 2014 and February 2015. The case study, it is hoped, would provide useful lessons to guide choices for NRM policymakers and development actors in the drylands, by contributing to the pool of evidence on what succeeds and what does not in different dryland situations and contexts. The landscape-level methodology will also provide useful insights for NRM dryland stakeholders as they reflect upon general issues of governance, management methods, and relationships to institutions and management structures in other sectors and at other strata.



## 2 Objectives

The overarching target of the Il'Ngwesi dryland natural resource management case study was to create useful programming and policy-action lessons that would assist in the conceptualization of an enabling environment for natural resource management in rangelands generally. This was to be done through a methodology that describes and characterizes the natural resource management system in place in the group ranch, analyses the NRM approach applied by the community, and observes the successes and challenges for implementing natural resource management in the group ranch.

Key NRM dimensions considered, including but not limited to, were:

- Processes for institutionalizing management plans and decision-making systems that have been attempted or considered in the ranch, including the prospect of doing so through county legislation;
- Overlaps and discontinuities in where authority for different kinds of decisions lies; and,
- Issues around which kinds of decisions and management planning processes take place at what scales and levels.

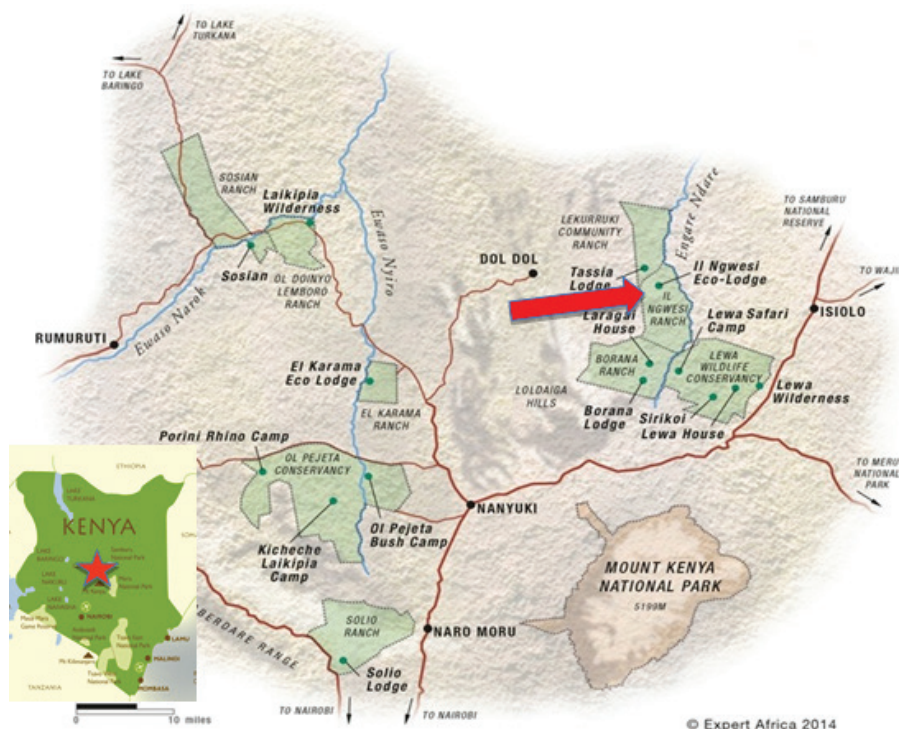
### 3 Study area

Il'Ngwesi group ranch is located in the northern lowlands of Laikipia County within the expansive North Rift region of Kenya. It covers a land area of approximately 8675 ha northwest of Mt Kenya, Africa's second highest peak, and is one of the nine administrative locations that constitute Mukogodo district. Bordering areas include Isiolo and Samburu counties to the east and north, Mukogodo forest to the west, Lekurukki group ranch, and the expansive Borana and Lewa conservancy ranches.

As are most of Laikipia county's lowlands, Il'Ngwesi is largely semi-arid savannah grasslands mixed with shrub-lands and acacia woodlands, all of which combine to create ecological landscapes suitable for pastoralism and livestock rearing, but also ideal habitats for wildlife. The more arable, high altitude land areas in the south, adjoining the slopes of Mt Kenya, are well suited for cultivation and host some of the most productive large-scale commercial farms in Kenya.

The Laikipia land tenure regime consists of privately owned ranches (utilized for large-scale livestock and crop production and recently for wildlife conservancies); communal group ranches, managed by and occupied by Maasai communities; small individual land holdings mostly used for subsistence farming; and government/public land (largely forest areas). In the east and west of Il'Ngwesi group ranch, in Isiolo and Samburu counties, there exists community lands (formerly 'Trust Lands'), which are unregistered community lands 'held in trust' by the former local county councils (now county governments) for the traditional residents of the regions (Kenya 1970).

Figure 1. Map of Laikipia showing location of Il'Ngwesi group ranch.



Il'Ngwesi group ranch is one of the several registered communal land holdings in the county; a land tenure category that bestows ownership and management rights over designated communal territories to registered group members (Kenya 1968). The Il'Ngwesi group ranch community population comprises about 7000 people, 2715 of whom live within the group ranch and the rest out of the ranch in private land holdings acquired by the group ranch or individuals (Il'Ngwesi group ranch 2010). This external residence pattern has allowed the wildlife-rich group ranch to dedicate about 80% of its territory for tourism, wildlife conservation and livestock grazing during drought periods. The remainder of the ranch is utilized for settlements, farming and livestock rearing.

The livelihoods means of the Il'Ngwesi Maasai community was traditionally livestock and wildlife based (Ngwesi means 'wildlife' in Maasai), but it has since diversified to now include employment income, trade, cultivation, and incomes from community conservation and tourism enterprises. The community plays a recognized leading role in community-based consumptive (hunting) to non-consumptive wildlife conservation and eco-tourism efforts in the country, leading a shift from (tourism) use of wildlife species. The Il'Ngwesi community tourism and conservancy initiative is highly acclaimed and has been awarded a number of well-known community natural resource management and conservation awards. Livelihoods diversification notwithstanding, discussions with residents of Il'Ngwesi group ranch disclose that livestock rearing continues to be the mainstay activity in the economy, culture and social lives of the Il'Ngwesi community. Indeed, the local land-use and management system's (grazing system) central role is to safeguard and promote sustainable livestock production and ensure pasture availability around the year.

## 4 Methodology

To attain the study's objectives, the case study adopted a flexible participatory approach that employed a selection of qualitative research methods to gather data and information. The research methods included: landscape transects walks, key informant interviews, interest group and gender segregated focus group discussions, and a validation and feedback workshop with selected community members and other stakeholders (see Annex 2 for a detailed methods matrix). A desktop literature review was conducted prior to fieldwork exercises. Interview guideline questions were also developed to structure key informant interviews and focus group discussions (see annex 1 for a list of guiding questions). Throughout the study, data collection and analyses were informed by the landscape governance perspective, which ILRI is developing for enhanced NRM understandings in drylands.

Data collection was conducted over three field visits between January and February 2015, including the feedback and validation workshop held late in February. Over the research period, 12 key-informant interviews and three focus group discussions were conducted. Three transect walks/drives were also made through the group ranch. Individual interviews targeted the leadership of local NRM institutions in Il'Ngwesi and representatives of external institutions (NRT, LWF, county government) that collaborate with the community in natural resource governance. The focus groups included members of the group ranch management, women leaders, and village herding forums. The validation workshop brought together the group ranch's leadership, members of village forums, women, representatives of partner organization and ILRI representatives. Interviews and focus group discussions' proceedings were recorded for later analyses. An outline of the study was presented to select community members and stakeholders during the community feedback workshop for content validation and for further input.

## 5 Characterization of management and governance

### 5.1 Overview

Management and governance of natural resources in Il'Ngwesi is structured and organized around the group ranch land holding framework. Group ranches are hybrid land systems created in Kenya's drylands after independence to bestow formal ownership to pastoral communities over customary territories and provide a framework for the extension of infrastructural development and services to arid territories (Davis 1971; Galaty 1980). Resident families, mostly through male heads, were registered as 'private' owners of the new communal ranches and mandated with the management of the ranches. Il'Ngwesi group ranch has utilized this framework to develop an elaborate institutional system for managing land use and for allocating decision-making responsibilities and governance of resources to different local committees.

The communal group ranch is the landscape level in which resource governance and collective decision-making takes place in Il'Ngwesi. The group ranch framework has made possible sustainable communal management of land and natural resources, and a land expansion initiative, which facilitates effective livestock and wildlife management, reduction in demographic pressure on land, and strategic livestock grazing (beyond the ranch) during difficult drought periods.

The Il'Ngwesi resource use and landscape management, includes a number of land parcels (for settlement, cultivation and grazing), to which the community controls the rights. These include the formal group ranch territory, the purchased settlement areas, beyond the group ranch, and the strategic herding parcels in the adjacent highland areas of Mt Kenya and Aberdare ranges.

Il'Ngwesi is comprised of seven localities/neighbourhoods, namely Sanga, Nandugoro, Chumvi, Ethi, Ngarendare/Manyangolo, Lebarua and Olchurai.

The group ranch territory that forms the core livestock rearing and conservation zones was carved out along the perceived customary territory of the Il'Ngwesi Laikipia Maasai who were traditionally resident in the area before formal group ranches were created. The group ranch boundaries follow natural physical landscape features, such as the Engare-ndare river and Mukogodo hills and forest. The land parcels outside of the group ranch include three community residential parcels, located in the close by areas of Ethi, Chumvi and Engare-ndare and two strategic dry season grazing parcels (two acres each) in the slopes of Mt Kenya and the Aberdare ranges.

The residential parcels were acquired by the group ranch, and allocated to group members as settlement areas, to reduce demographic pressure within the core group ranch and allow for sustainable wildlife conservation. A few sections of the landholdings, which are not distributed and occupied, are rented out to individual community members for use in agricultural cultivation. Some community members have also purchased individual holdings in the areas which helped in further reducing land pressure.

The strategic grazing parcels were acquired by the group ranch to facilitate easy grazing during long droughts, when community livestock must access pasture in the forests of Mt Kenya and Aberdare. Prior to the acquisition of the parcels, the communities' livestock faced difficulties in accessing the needed highland pastures, since they did not have rights to lands adjacent to the mountains from where cattle could access the pasture.

Table 1. Summary of key dimensions of management and governance

Management/governance dimension	Summary
Definition of the landscape	Predefined (registered community land—group ranch)
Criteria for definition	Traditional communal territory
Authority and governance powers	Full decision-making and implementation powers
Governance by whom	Communities (through local management organs/committees)
Form of participation and representation	Based on communities and/or jurisdictions (each key governance organ is made up of representatives of each constituent locality)
Multi-level planning approach	Land use planning done at the group ranch level and monitoring carried out at village level
Involvement of women	Special seats provided for women representation in key group ranch organs

## 5.2 Definition of the landscape

The land area forming the present Il'Ngwesi group ranch is land converted from the customary territory of the Il'Ngwesi Maasai of Laikipia. Maasai territoriality and land access rights were traditionally allocated along Maasai political sections, Il'osho, of which the larger Laikipia Maasai section was one. Below the Ol'osho, distinct groups identified on the basis of common local territorial occupation occupied segments of the larger territories, l'nkutot, and controlled specific rights over resources in such areas. In the case of the Il'Ngwesi several such adjacent land segments, occupied by the hunting and livestock keeping Il'Ngwesi Maasai, were collapsed and converted into a formal group ranch.

The Il'Ngwesi landscape was therefore predefined by customary Maasai land tenure, but got formalized with the creation of the group ranch. In later years, the community has increased the range of the landscape, through expansionist land purchases over and beyond the formal group ranch territory.

## 5.3 Authority and governance powers of the landscape-level institution/process

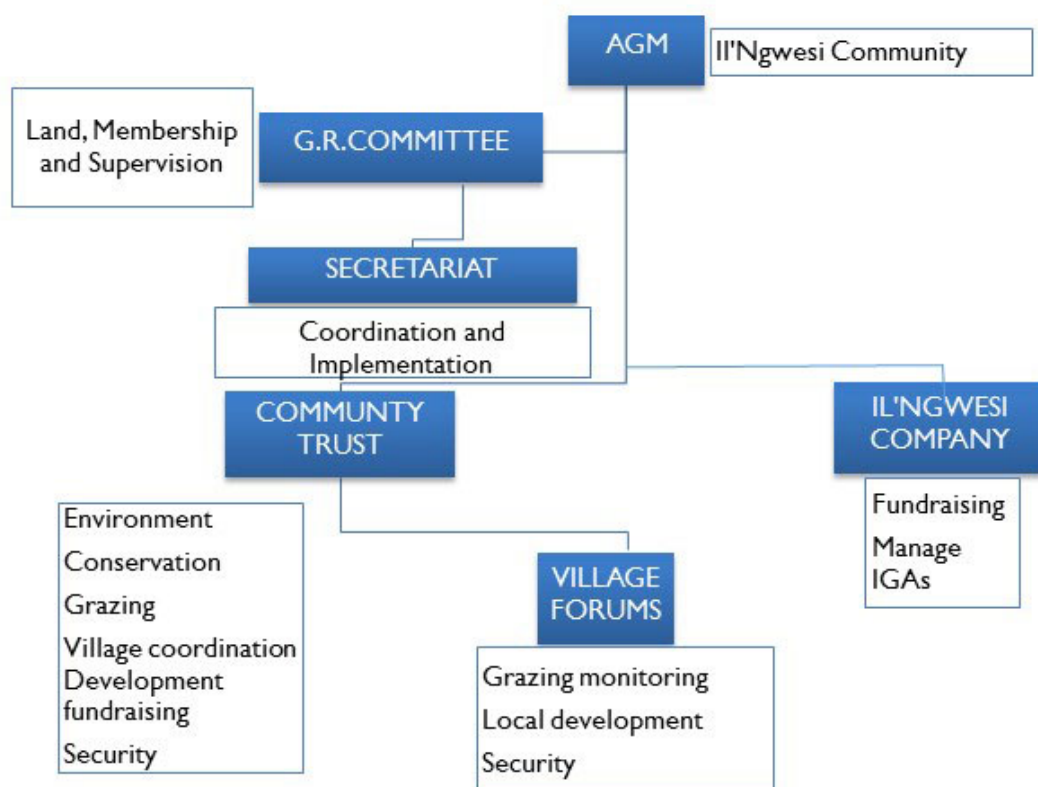
The Il'Ngwesi group ranch landscape is governed through representative institutional organs/committees comprising a supreme group ranch committee and two other committees with delegated mandates, namely, the community trust—in charge of natural resources and community matters—and the Il'Ngwesi Company—in charge of fundraising. At a lower level, village forum committees are in place to coordinate the monitoring and enforcement of livestock grazing rules.

Authority over and governance of natural resources in Il'Ngwesi group ranch is vested in the legally mandated group ranch committee. The committee, in turn, has delegated parts of its functions to two other independent committees, the Il'Ngwesi Community Trust (ICT) and the Income Generating Project (Il'Ngwesi Co. Ltd) (Il'Ngwesi group ranch 2005). Under the group ranch committee, also falls the secretariat, coordinated by the group ranch manager. The secretariat, which has a working staff of six people and offices in Nanyuki township manages community project activities and handles external communication and marketing for the income-generating community hotel, the Il'Ngwesi Eco-Lodge.

The group ranch committee derives its authority from the Group Ranch Act (1968), which stipulates it as the formal legal organ for group ranch management. The committee is essentially a 'group representatives' organ, which is granted the peoples' mandate when registered members in an annual general meeting constitute it. In Il'Ngwesi, the group ranch is the supreme governance organ with overall responsibilities and authority over land and natural resource governance and is the custodian of the group ranch land, assets and property. In this regard, it has supervisory monitoring roles over the performance of other committees with delegated functions. It is solely in charge of all land issues, such as leaseholds for the eco-lodge, purchases of land and distribution of the same to members. In addition, it has the authority to alter, through an AGM, the composition of the members' register by adding or removing names to the register. Its authority and jurisdiction over land matters in the group ranch, derived from the Group Ranch Act and approved in the AGM, is final. Higher-level institutions, such as national and county government, cannot force the committee to rescind or make any decisions, unless through consensual persuasion. The same case applies to external groups, which must obtain the approval of the committee to access any resources within the group ranch.

The committee is the strategic and policymaking organ in charge of group ranch development and future directions. It is expected that it will provide activities reports and present group ranch plans to members during the annual general meetings. The group ranch committee is elected in an annual general meeting and comprises a chair, a vice-chair, a treasurer, a secretary, an assistant secretary and five other committee members (total of ten) to serve for a term of five years renewable once. The committee is constituted in a format that ensures that each of the seven constituent community localities in Il'Ngwesi has representation in the committee. Further, two slots are reserved for women in the committee to ensure some degree of gender inclusivity.

Figure 2. Il'Ngwesi internal institutional structures.





The community trust committee is the other governance institution in Il'Ngwesi playing critical roles in the governance of natural resources and in managing community projects. The committee derives its authority from the Il'Ngwesi constitution and is independently created, through elections, held in an AGM. Its composition includes seven members each representing one of the seven constituent neighbourhoods, plus two slots reserved for women's participation. The women's slots are shared on a rotational basis (one term) between the seven neighbourhoods to ensure equal opportunities for all constituent localities. Additionally, the committee is allowed to co-opt up to three extra members to assist in the delivery of its mandate. Members of the trust serve for one term of three years, but are eligible for re-election once.

The functions and powers of the community trust organ principally revolve around natural resource governance and community development issues. The committee is mandated with the key task of overseeing all environmental and ecosystem related programs (including the community's Rhino Sanctuary) and advises the group ranch committee on the same. In this regard the committee develops policies and guidelines for livestock grazing control in the group ranch and enforces grazing controls. To implement and monitor grazing controls and coordinate village level development, the committee is mandated to create village forums in every neighbourhood. Village representatives in the trust committee coordinate village forums in their respective villages. The committee works closely with the village forums to identify and prioritize development needs and pinpoint funding sources for the projects. In this regard, it serves as a crucial bridge between the villages and the group ranch committee and secretariat in addressing community challenges such as education, health, water and sanitation, livelihoods support and pasture management. The committee also has the arduous task of ensuring safety and security, a task that it accomplishes by working closely with the government chief for the location and other government organs.

The next principal governance institution in Il'Ngwesi is the Il'Ngwesi Company, a registered limited liability company fully owned by the community. The company's main objective and role, as detailed in the community's constitution, is to guide the community in initiating and overseeing income-generating projects of the group ranch. The income-generating activities are essentially tourism and conservation related and includes the Il'Ngwesi eco-lodge, Il'Ngwesi cultural boma, and community camp sites. Board members of the company are elected in an AGM and serve for a term of two years being eligible for re-election. The group ranch committee supervises the company and reports to the community during the AGMs.

## 5.4 Governance by whom

The community, through representative local governance institutions, undertakes the most prominent role in the governance of natural resources in the Il'Ngwesi landscape. The community's aspirations and intentions in resource management are captured and articulated in the community constitution and in regular five-year strategic development plans. The members of the group ranch committee, the two independent committees and the village forums all comprise community members, and the institutions obtain their mandates from and are answerable to the community of group ranch members. The legally mandatory annual general meetings create a forum for continuous reiterations of community interests and for engagements between community members and between members and the governance institutions. The mandate for all critical decisions pertaining to landscape planning and resource governance emanate from community members. While they all have delegated authority for decision-making, the community of members through AGMs always, have the final word in all decisions.

The process of decision-making in Il'Ngwesi is negotiated and bottom-up and appears designed to create as little conflict as possible among members. Over time community members have become aware of the group ranch's land and resource use regulations and the institutions in charge of monitoring and enforcing them. When issues needing decisions arise, resolutions are first made at the village forum level in coordination with the relevant principal group ranch committee. Where such issues persist, they are taken to the next level of the principal committee in charge from where if not addressed they are taken to the joint committee meeting comprising all the three principal committees. At this level the collective group ranch leadership ordinarily arrives at an agreeable decision. If the decision requires the collective community's ratification then all the principal committees jointly present it to the AGM for adoption.



Subject matters that do not obtain unanimous resolutions at the joint committee level are not presented to the AGM, since they would likely create divisions among community members during discussions. Only decisions with agreed upon resolutions by the community's leadership (the joint principal committees) are tabled at the AGM for deliberation and adoption. This approach to decision-making usefully prevents community disagreements, but may have the unintended outcome of delaying decision-making or of disfranchising the rights of individual members, when individual rights run counter to group interests. The group ranch act provides for voting by individual members in decision-making, but the Il'Ngwesi community appear to prefer to use individual voting only for ratification of decisions already arrived at through consensus.

The constituent localities/neighbourhoods in Il'Ngwesi (having village forums and representation in all principal committees) materializes to be the critical constituencies whose interests the group ranch strives to address and balance. This is evidenced by the delicate balancing system for sharing principal committees' seats among the neighbourhoods, and in how community development resources are shared amongst the localities in the five-year strategic development plans.

## 5.5 Duties of members and limitations

While group interests evidently take prominence over those of individuals in Il'Ngwesi, individual members' interests are nevertheless also catered for. The group ranch constitution provides for individual's rights and privileges and outlines duties and limitations pertaining to individual ownership rights in the group ranch. The constitution declares that all individual registered members own the group ranch in common; it further provides for the right of individuals to sell or dispose their ownership rights in the group ranch. It, however, creates a condition for any member who proposes to sell their land rights, stipulating that any person to whom land rights shall be transferred to must, as a condition precedent, complete and execute the necessary application for membership of the group ranch.

The group ranch further obligates each member to ensure that anybody to whom they grant access or use of land in the group ranch shall comply in all respects with the terms and conditions of the group ranch's constitution and with all decisions and regulations of the group ranch and its organs. Additionally, any member who proposes to grant or has granted any land lease or usufruct rights to any external persons must ensure that a written agreement is created for that purpose. Such a contract must ensure that the new land user completely understand the provisions of Il'Ngwesi constitution and agree to be bound by all its terms and conditions for so long as they utilize the land. The agreement should, further, declare that the Il'Ngwesi community trust committee has powers to levy any fines and penalties against any such external user as if they were members of the group ranch.

## 5.6 Multi-level planning approach

Landscape level planning at Il'Ngwesi takes place at the group ranch level while resource use monitoring takes place mostly at the neighbourhood level. Indeed, the multi-level planning approach is provided for in the group ranch's management regulations; the constitution provides that the group ranch shall operate at the levels of group ranch, where the secretariat and coordination framework is established, and at the neighbourhood level, where neighbourhood forums take the central roles. Neighbourhood forums, which often double as grazing committees, invariably interact with each other in negotiated management of grazing resources. The horizontal engagement is helpful in enhancing coordinated use of pasture resources especially under the new livestock bunching herding system, where cattle from separate villages stay and graze together, moving from pasture block to another, in a bid to enhance effective pasture use and revitalize degraded areas. The community is supported in this by the Laikipia Wildlife Forum, which has seconded a grazing coordinator (an ad hoc member of the community trust committee) to coordinate grazing committees in implementing the bunching herding system. Bunching herding is a livestock grazing system moulded from Allan Savory's holistic range management model, where cattle are grouped together in large herds and grazed over short periods in different land sections (Savory 1983). The rationale is that large herds intensively utilize the land and in the process open up topsoil layers while injecting needed organic matter. The demonstrated outcomes have been improved pasture conditions (increased concentration and availability of palatable species) and range rehabilitation.

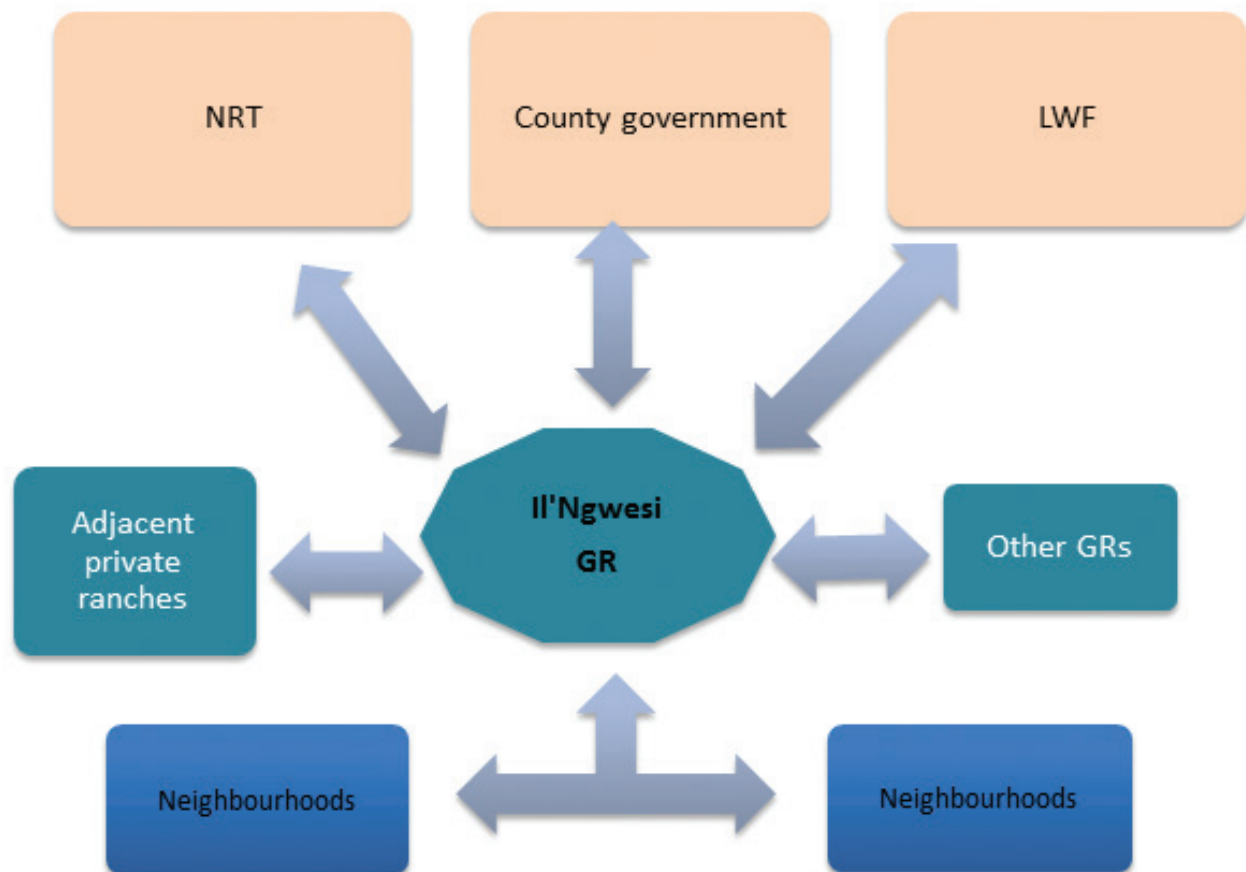
The group ranch also interacts laterally with neighbouring group ranches and adjacent private ranches, but on a relatively less regular basis. Crosscutting issues of common interest at the level include, but are not limited to, security and wildlife poaching and sharing of pasture and water in times of scarcity. The group ranch chair and committee plays the leading role in such engagements.

In addition, the group ranch interacts vertically with government agencies and other entities of concern. County government organs interact with the group ranch on areas of mutual interest especially wildlife and human security (where the national government administrative office plays a central role), road and water development and tourism. Such engagement is not always without strains, such as in the area of tourism development where the group ranch feels that expensive county government levies are disincentives for community investments in a sector where the government has not invested in as much.

More operative, however, is the vertical interface with regional conservation groups; the Northern Rangelands Trust (NRT) and Laikipia Wildlife Forum (LWF). Il'Ngwesi is part of a network of conservancies that constitute the NRT, a conservation organization providing support to community conservation initiatives in northern Kenya. The group ranch's community wildlife ranger/scouts programs and Rhino protection unit are largely supported by the NRT, which pays salaries to the scouts and provides radio and other communication system for the teams. It also monitors wildlife populations, through community scouts and provides external marketing for women handicraft projects. It also plays useful roles in marketing and supporting the group ranch's ecotourism business. NRT convenes a council of elders meeting twice a year, during which all chairpersons of community conservancies meet to deliberate on pertinent issues.

LWF, on other hand, interacts with the group ranch in social projects, especially those on women's issues, as well as in offering trainings in issues of grazing management and range rehabilitation.

Figure 3. Multi-level landscape connections in Il'Ngwesi.



## 5.7 Involvement of women and minorities

Women's rights to land in Il'Ngwesi are not explicitly provided for. Customary to Maasai society, women (and men) in Il'Ngwesi acquired rights to land through their membership to families and communities traditionally occupying territorial spaces. Membership to a territorial community therefore guaranteed ownership and user rights to all members. Men, heads of households, represented family units in discussions related to land rights and use. With the creation of the group ranches, the male household heads were registered as members of the land parcel converted into a group ranch. This in effect made them the legal owners of the land, and women became subsidiary landowners deriving rights from their male relatives, as wives, daughters or sisters. Women heads of households, such as widows and unmarried women (declared as 'daughters of the home' (*intoyie-en'kang*)), were, however, also included in the group's registers, especially when they do not have mature sons to represent them. There are only 12 such women members in the land register out of a total membership of 800. The minimal inclusion of women in the land register has far-reaching significance, since group ranch legislation stipulates that decision making in AGM be done by registered group ranch members.

Minority groups, mostly a few non-Maasai immigrants' families, staying with resident families have no rights to land (through registration), but obtain land use rights on the strength of their host families.

The governance institutions in Il'Ngwesi are invariably male dominated, but the group ranch has put measures to ensure gender inclusivity in the group ranch committee and in the board of trustees (community trust). Two rotational slots (around the neighbourhoods) are reserved for women in each of the two committees. At the time of this study, there were two women out of 10 members seating in the trust committee, and two members out of 11 in the group ranch committee. There are no seats reserved for women in the company (business and income-generating committee), and as a result there were no women seating in the committee at the time of study.

## 6 Discussion

The answer to the question of what is the best arrangement for natural resource management and resilience building in pastoral drylands socio-ecological systems is still far from being fully understood (Mwangi and Ostrom 2009). Pastoral production in dryland environments in Africa face challenges occasioned by scarce and sparsely distributed pasture and water resources, erratic rainfall seasons, competition from other users for scarce resources, and land tenure and policy transformations that often create challenges between customary and formal systems and institutions. Initiatives that seek to promote dryland environments and lessen pastoralists' vulnerability to endemic livelihoods and environmental challenges require nuanced understandings of dryland systems and of methodologies for governing human and natural resources interactions in drylands.

The observation of governance systems as practised by pastoral communities in dryland ecologies is a useful step in developing additional insight into what works or not for pastoral resource governance. This NRM study in Il'Ngwesi contributes to the understanding of resilience and resource governance in pastoral drylands by using landscape-level approaches in a communal pastoral setting.

The assessment of the natural resource governance system in Il'Ngwesi group ranch indicates the application of landscape level approaches in resource planning, decision-making and utilization. Landscape level governance in Il'Ngwesi community has likely evolved to cater for the community endeavour for a sustainable pastoral livelihood system (within a confined dryland) yet pursuing emerging economic opportunities in conservation tourism made possible by a wildlife rich habitat, all in the context of a growing population that is exerting pressure on available resources. The emergent resource governance system, based on the hybrid communal 'group ranch' land ownership framework, overlays several villages/neighbourhoods, whose amalgamation allows for resource exploitation at a wider landscape scale.

In addition, the group ranch governance system, we have seen, interfaces vertically and horizontally with other institutions (higher level institutions, other group ranches and adjacent private ranches) further expanding the landscape scale for livelihoods operations and hence system resilience. The utility of a wider landscape scale for livelihoods operations in Il'Ngwesi is further evidenced by the strategic acquisition by the community of land parcels in the far areas of Mt Kenya and Aberdare ranges to facilitate dry season herding in the slopes of the two mountains.

Inside the group ranch's territory, the community has zoned the land into segments for use in wildlife conservation and dry season grazing (80%) and wet-season grazing and human settlement (20%). The grazing areas are further organized into six grazing blocks to facilitate efficient pasture utilization and use of livestock in range rehabilitation using a holistic management approach.

The allocation of substantial land for conservation and grazing purposes is possible because of the transfer of a significant section of the human population of Il'Ngwesi from the group ranch territory to land parcels purchased by the group ranch in nearby areas. The strategic investment on settlement land has usefully made it possible for the community to dedicate much land to wildlife conservation and tap into a relatively lucrative tourism industry. Revenue from tourism, on the other hand, provides much needed funds to finance education, health care, water projects among others in the marginal underdeveloped area.

The management of livelihoods operations (livestock husbandry and eco-tourism) at a wide landscape scale is possible because of an elaborate group ranch institutional governance system set in place by the community. The system, whose rules and regulations are codified in the community's constitution, creates institutions and decision-making processes that coordinate resource governance within and beyond the group ranch. The governance system includes:

- Organs for managing land and providing general oversight to other institutions;
- Organs for natural resource management (grazing and water resources), security, and community development projects; and
- An institution for handling income-generation projects of the community.

The constitution further stipulates rules for ensuring fair representation of neighbourhoods/localities in all principal management organs and for guaranteeing the inclusion of women in the organs.

An important factor in the observed success of the natural resource governance system in Il'Ngwesi is the organizational platform provided by the group ranch land ownership framework. The framework usefully binds together a 'community of interest', which has since self-organized and created internal governance institutions that are making it possible for members to exploit resources at a landscape level scale, beyond and above constituent village levels. The outcomes for the community are improved social cohesion, streamlined NRM governance, environmental conservation, reduced livelihoods vulnerability, and increased opportunities for community members. Challenges faced by the system are largely those related to conformity to rules. While cases of non-conformity to internal rules, such as when livestock wander beyond allowed grazing boundaries, were noted, they were always presented as ordinary management challenges. The group ranch has an elaborate warning and fining system to punish such offender and control shirking. Fines are imposed depending on the recurrence of infringement and the circumstances leading to it. The success of the system is augmented by the fact that the entire community of herders participates in the monitoring and enforcement of grazing regulations. This reduces the cost of monitoring resource use. Fining and admonishment is, however, a task of the village grazing committees.

The more difficult challenge, however, was that of an observed case of territorial incursion, into the group ranch, by external groups determined to access pastures conserved by the community for its dry season grazing needs. During the field study, Samburu herders facing pasture and water shortages due to failed rains, invaded and settled in sections of land earmarked by Il'Ngwesi for later grazing. Meetings were held, but the Samburu, who were armed with firearms, defied directives to move out and continued grazing in Il'Ngwesi land. It took the collective effort of the national and county governments security agencies to normalize the situation. This scenario highlights the significance of both vertical and horizontal institutions in supporting sustainable resource management in the region. Horizontal (adjacent groups) must respect other groups' NRM systems, while higher level vertical groups (government) have an important role in moderating interactions between lower level groups of resource users. In the observed case, while government security agencies responded positively and helped eject the invaders, such developments, in future, if left unchecked, have the potential of negatively disrupting self-governing natural resource systems that have taken years to mature.

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# Annexes

## Annex I. Interview guideline questions

Use the following key questions to guide interviews with individual informants and focus groups

1. What institutions are present in the group ranch for managing the use of natural resources? List and describe their scope and the landscape scale they operate in.
2. What governance authorities do the above mentioned resource management institutions have (concerning decision-making powers and scope of landscape level of operation)? Give examples of the rules they can make.
3. Describe any specific governance limitations the above institutions face (decision-making powers and scope of landscape level)? Give examples of the rules they cannot make.
4. For each of the above: identified institutions, describe if they are under the control of community members or not, if yes, describe how community control is exercised in the institution focusing on how community members are selected for representation in the institution.
5. How does the above identified institutions interact with each other, with others in adjacent group ranches (horizontal) and with those above or below them (County government or sub-group ranch). Describe for each institution.
6. What are some of the challenges and opportunities (advantages) experienced in the above interactions (list for each institution).
7. Are there any formal or informal trans-group ranch natural resource consultative/discussion forums? Identify and list.
8. Do the above institutions carry out any landscape planning at whatever level? Identify and list specific instances or process of planning land use in the community.
9. If there are any landscape planning processes, describe the processes giving details of the people involved, community representation, planning process, levels of planning, specific institution involved etc.
10. How are women and youth involved in natural resource governance and planning in the community? Give particular rules (if any) that ensure their consultation and involvement?

## Annex 2. Methods matrix

	Method	Description	Target group
1	Desktop review on policy analysis	Review relevant NRM literature for Laikipia in general and Il'Ngwesi in particular	
2	Key informant interviews	Administer an open-ended questionnaire to pre-identified opinion leaders in the community and beyond to generate in-depth local level understanding of NRM dynamics as experienced by individuals in the community	Opinion leaders in the community, relevant county government and NRT personnel, other persons with relevant information
3	Focus group discussion	A meeting of selected individuals including community members and their leadership to generate collective views on natural resource management in the community	Community members, conservancy leadership and group ranch leaders
4	Participatory rural appraisal (transect walk and seasonal land use calendar)	A transect walk/drive around the group and conservancy to observe landscape and land use management. Also, in a participatory manner, develop a seasonal calendar to illuminate on the spatial and temporal utilization of natural resources by the community	Community members



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